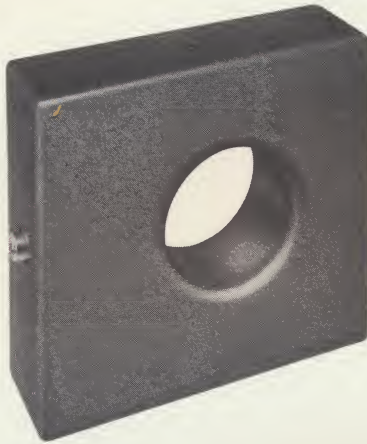


Precision

WIDE BAND CURRENT TRANSFORMER

PULSE CURRENT TRANSFORMER



Model 325

This unit allows precision amplitude and waveshape monitoring of current. It is particularly useful for monitoring currents at very high voltages or where a large aperture is needed. It is used with an oscilloscope to monitor currents of milliamperes to hundreds of amperes flowing in a high or low voltage conductor or in a beam of charged particles.

• SPECIFICATIONS

1. Output Voltage/Ampere - 0.25 (+1%, -0%, initial pulse response).
2. Rise Time - 20 nanosec. for a current step-function.
3. Droop - 0.1% per microsecond for top of a square wave or pulse.
4. Pulse $I\tau$ - 0.093 ampere second maximum.
5. Frequency Response - 200 Hz to greater than 10 MHz at 3 dB points.
6. Sine Wave I/f - 0.58 amps peak per Hz.
7. Current - 2,000 amps peak, 15 amps rms maximum.
8. Insertion Resistance - less than 0.002 ohm.
9. Voltage Rating between Center Conductor and Case - 300 kV pulse in oil, 30 kV (dc, ac, or pulse) in air for 1-1/2" diam bare center conductor.
10. Capacity Added to Circuit - 4 pF in oil, 2 pF in air, for typical installation.
11. Shielding - double; inside shield connected to cable shield; outside shield can be grounded.
12. Output Connection - UHF receptacle.
13. Cable - 52 ohm cable such as RG-8/U.
14. Cable Termination - typical oscilloscope input (e.g., 1 megohm and 20 pF in parallel).
15. Overall Dimensions - 8" x 9" x 2-3/4" thick, 3-1/2" ID.

PEARSON ELECTRONICS, INC.

4007 TRANSPORT STREET, PALO ALTO, CALIFORNIA (415) 326-7285

WIDE BAND CURRENT TRANSFORMER

Precision

PULSE CURRENT TRANSFORMER



Model 110

This current transformer is flat from 1 c/s to 35 Mc/s (3 dB points). It is useful for audio, video, rf and pulse measurements. Current being measured can be in a conductor at low or very high voltage, or a beam of charged particles.

• SPECIFICATIONS

1. Output Voltage/Ampere - 0.1 (+1%, -0%, initial pulse response).
2. Rise Time - 20 nanoseconds for a step-function current pulse.
3. Droop - 0.5% per millisecond for top of a square wave or pulse.
4. Pulse $I\tau$ - 0.6 ampere second max. (small bias current in secondary needed for values approaching this max.).
5. Frequency Response - 1 c/s to 35 Mc/s at 3 dB points.
6. Sine Wave I/f - 2.5 amps peak per cycle/second.
7. Current - 5,000 amps peak, 50 amps rms maximum.
8. Insertion Resistance - less than 0.0002 ohm.
9. Voltage between Center Conductor and Case - 30 kV flashover in air for 3/4" diam bare center conductor.
10. Capacity Added to Circuit - 4 pF in oil, 2 pF in air, for typical installation.
11. Output Connection - BNC receptacle.
12. Cable - 52 ohm cable such as RG-58/U.
13. Cable Termination - typical oscilloscope input (e.g., 1 megohm and 20 pF in parallel).
14. Overall Dimensions - 4" OD x 1" thick, 2" ID.

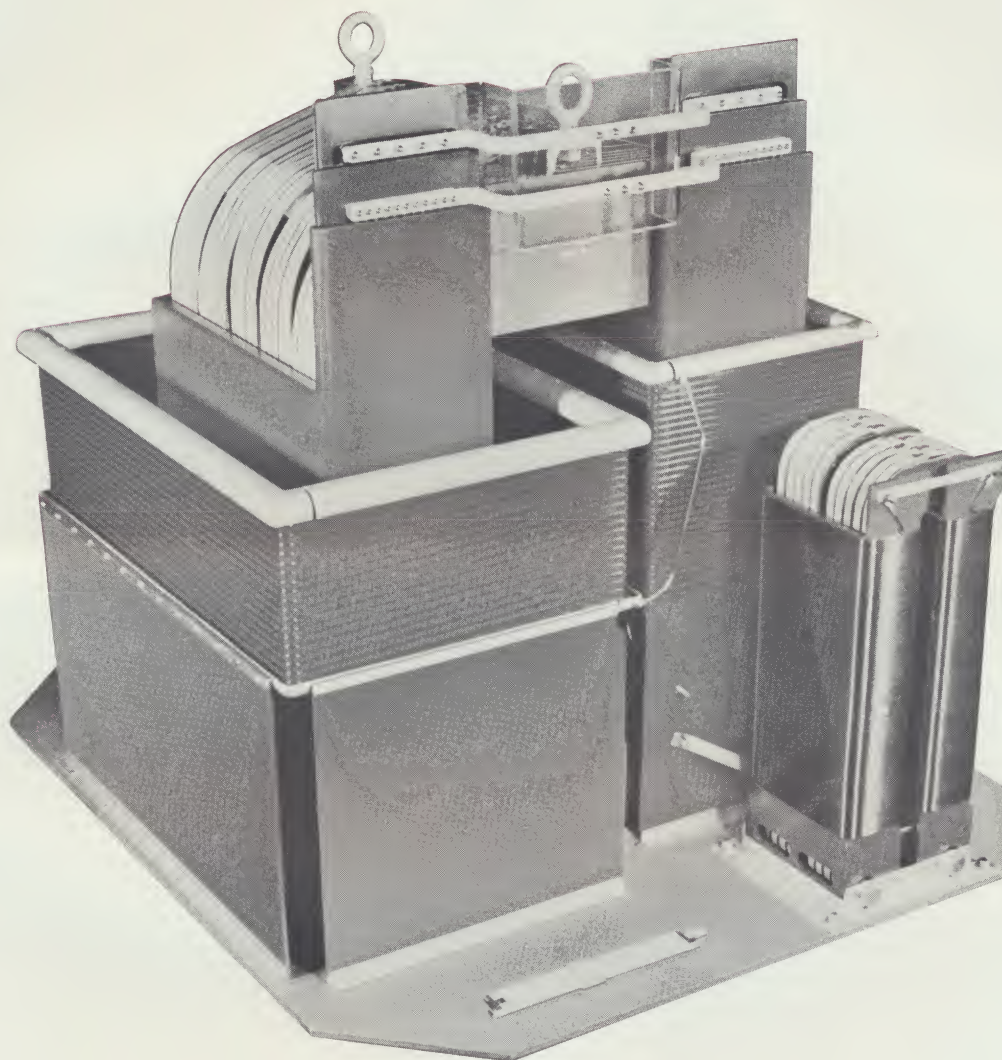
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PEARSON ELECTRONICS PULSE TRANSFORMERS

HIGH VOLTAGE

HIGH POWER

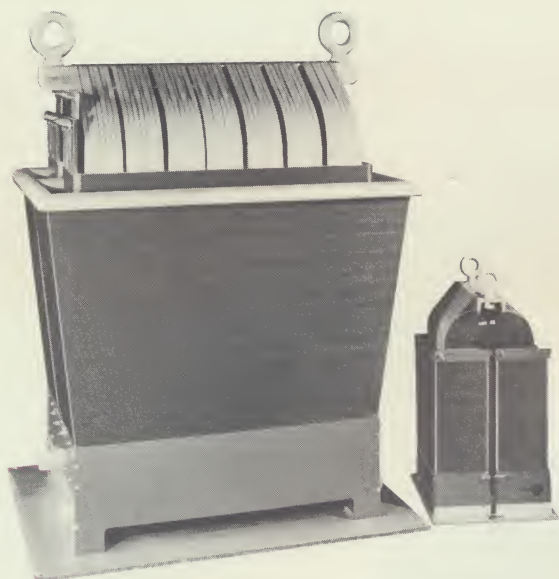


Individual pulse transformer for supplying pulse voltage to a resistive load for a high-voltage testing application. This unit was designed for immersion in insulating oil in the customer's tank. The transformer is rated at 600 kilovolts, 180 megawatts, for a 13-microsecond pulse (100% level). Provision is made for 50 kilovolts dc on the primary and for biased-core operation.

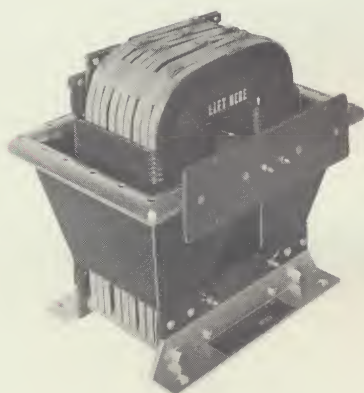
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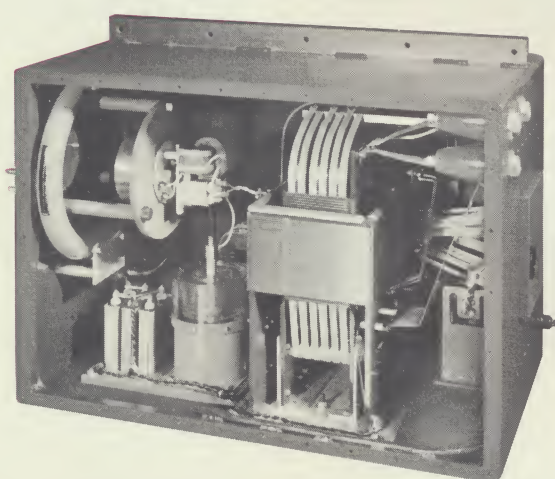
1.



2.



3.



1. Pulse Transformer and Bias-Isolation Inductor for High-Power Long-Pulse Klystron Testing

This combination of units is for immersion in insulating oil in the customer's tank. It is rated at 170 kilovolts, 23.5 megawatts, for a 500 microsecond pulse at 50 pulses per second (650 kilowatts average power). Pulse rise time at the load is 5.6 microseconds (10-90% levels). The combination weighs approximately 6000 pounds.

2. Individual Pulse Transformer for High-Power Klystron Operation in the Stanford Linear Accelerator Center (SLAC)

This unit is for immersion in insulating oil in the customer's tank. It is rated at 250 kilovolts, 62.5 megawatts, for a 2.8 microsecond pulse at 360 pulses per second. The calculated rise time at the klystron cathode is less than 0.35 microsecond (10-90% levels). The bifilar secondary winding is designed to handle the klystron heater power (300 watts at 120 volts). A small bias isolation inductor is also furnished.

3. Tanked Pulse-Transformer Assembly for High-Power Klystron Operation in a Portable Accelerator

This unit consists of a pulse transformer, electron gun filament transformer, bias isolation inductor, klystron heater transformer and socket, voltage divider, current transformer for monitoring electron beam current, and various bypass capacitors. All components are mounted in an oil tank with provisions for horizontal mounting of the klystron so that its cathode assembly is immersed in the insulating oil. The pulse transformer is rated at 200 kilovolts, 34 megawatts, for an 8.0 microsecond pulse at 180 pulses per second. The secondary winding is bifilar, handling the klystron heater power of 150 watts at 120 volts.

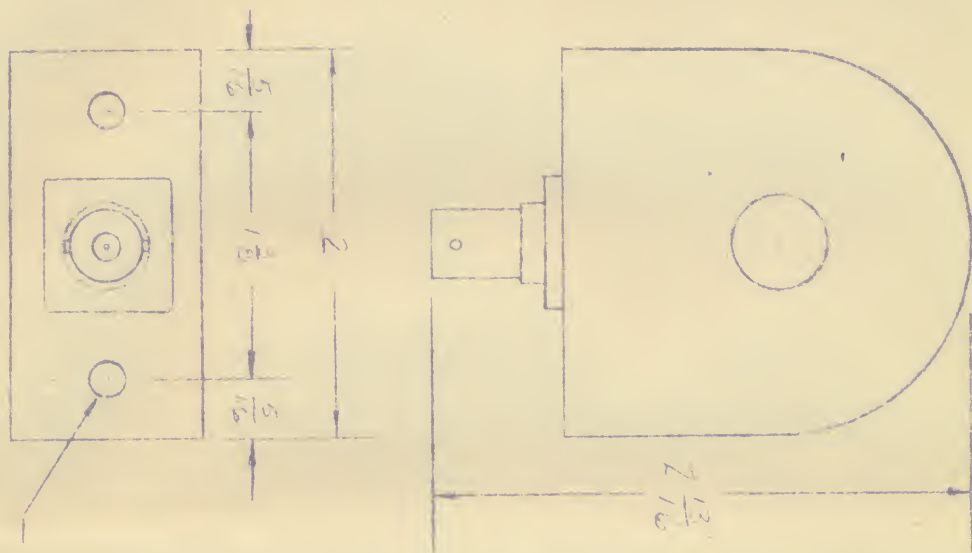
Pearson Electronics specializes in the development, design and manufacture of high and super-high-voltage pulse transformers and related components. Typical of the applications for which we have designed and manufactured pulse transformers are units for supplying beam power to high-power microwave tubes such as klystrons and traveling wave tubes, pulse voltage to particle accelerator injection systems, pulse voltage to pulsed X-ray tubes, trigger voltages to high-voltage switch devices such as thyratrons and spark gaps, and for supplying grid-pulse voltage to gridded microwave tubes. We also design and manufacture charging inductors for line-type modulators.

We can provide units meeting specifications with any degree of completeness, from individual units to complete pulse-transformer systems. Individual transformers are designed for incorporation by the customer in his equipment either as open-type units or hermetically sealed units. Complete pulse-transformer systems can be supplied with tanks for the insulating medium, cooling equipment, heater transformers, capacitive voltage dividers, X-ray shielding, pulse-current transformers, etc.

It is our policy to design and test each unit very carefully and to supply our customers with a mechanically and electrically reliable product. We welcome inquiries regarding specific pulse transformer requirements.

Our facilities include equipment for core testing at full flux density (before assembly into transformers), overvoltage pulse testing of completed units, and high-voltage dc testing.

PEARSON ELECTRONICS, INC.



2 THREADED HOLES.

8-32 TPI, $\frac{1}{4}$ " DEEP

UG-290 A/J RECEPTACLE

FOR MODELS	
410	4100
411	

REVISIONS		CURRENT TRANSFORMER OUTLINE DRAWING PEARSON ELECTRONICS, INC. PALO ALTO, CALIFORNIA	MTL.	JOB NO.
			QTY.	PART NO.
			SCALE 1:1	DWG. NO. CT-4
			ENG DDM	DATE 7/12/66

PEARSON CURRENT MONITOR TRANSFORMERS

Model No.	Output-*		Pulse			Characteristics		Sine Wave Characteristics	
	(volts/amp) (Accuracy +1%, -0%)	Inner Diam. (in.)	Maximum Current (amperes)		Rise Time (nanosec)	Drop (%/μsec)	I _r max. (amp. sec.)	Low freq. 3 dB point (c/s)	I/f max. (amps peak per c/s)
			Peak	Rms					
140-BT2 ²	8.0	2	125	2.5	100	1.0	0.0027 ³	2,000	0.012
140-BT1 ²	4.0	2	125	2.5	50	1.0	0.0027 ³	2,000	0.012
4100	1.0	0.5	500	5	10	0.06	0.00175 ³	120	0.011
2100	1.0	2	500	5	20	0.05	0.006 ³	100	0.025
3100 ¹	1.0	3.5	500	5	20	0.02	0.03 ³	40	0.13
150	0.5	2	1,000	10	20	0.003	0.024 ³	6	0.1
325 ¹	0.25	3.5	2,000	15	20	0.1	0.093	200	0.58
410	0.1	0.5	5,000	50	10	0.12	0.32	240	2.0
411	0.1	0.5	5,000	50	10	0.0005	0.19 ³	1	0.82
110	0.1	2	5,000	50	20	0.0005	0.6 ³	1	2.5
110A	0.1	2	10,000	50	20	0.0005	0.6 ³	1	2.5
310 ¹	0.1	3.5	5,000	40	20	0.02	0.6	40	3.6
1010 ¹	0.1	10.75	5,000	120	20	0.15	0.7	300	4.5
1025	0.025	2	20,000	150	20	0.07	1.15	140	7.2
3025 ¹	0.025	3.5	20,000	150	20	0.002	5.8	4	36.4
301 ¹	0.01	3.5	50,000	400	20	0.0005	14.5	1	91.0
301X ¹	0.01	3.5	50,000	400	20	0.0008	60.	0.15	390.

1 - Double shielded 2 - Includes balance transformer 3 - May need small bias current through secondary for maximum rating
* Initial pulse response

PEARSON ELECTRONICS, INC., 4007 TRANSPORT STREET, PALO ALTO, CALIFORNIA 94303, U.S.A.

TELEPHONE (AREA CODE 415) 326-7285